NOTE IV.

ON THE DIFFERENCES BETWEEN DANAIS LIMNIACE, CRAM. AND DANAIS MELISSA CRAM.

BY

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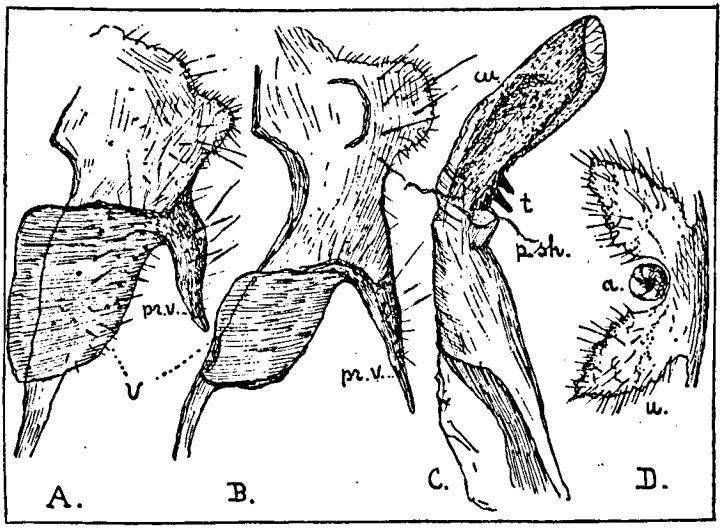
(With a textfigure).

In „The Rhopalocera of Java", Danaidae, Satyridae, Ragadidae and Elymniadae by M. C. Piepers and P. C. T. Snellen (the Hague, M. Nyhoff, 1913) I have found on page 30, that *D. melissa* Cram. should be synonymous with *D. limniace* Cram. On the same page one read: „The forms of this species (*limniace* Cram.) have been dealt with extensively by Fruhstorfer in „Berliner Entom. Zeitschr.", 1899, and by Dr. L. Martin in „Deutsche Entom. Zeitschr. Iris", 1910, where they have based several species and subspecies on these various forms; the latter attributes them to climatic influences. I suspect that here again we have simply to deal with phenomena of colour evolution; the specially pronounced spreading of the white, which plays the chief role here, being doubtless nothing else."

Always it will be a danger to determine a butterfly only by its external morphological characters, especially by its pattern and colour, even when people will explain the differences of pattern and colour by phenomena of colour evolution. Mr. Piepers is here not right, because there are also anatomical differences, which separate the two forms of *Danais* specifically. In „Die Grossschmetterlinge der Erde", Tom. 9, pag. 202, Mr. Fruhstorfer has published, that the valvae of the two quoted species as well as the uncus are different. He wrote the following: „Untersuchungen der Generationsorgane (*melissa* and *sep-*

tentrionis) haben aber die specifische Gleichartigkeit der habituell so differenzierten Formen ergeben. Nur der Uncus zeigt eine leichte Abweichung, indem er bei *septentrionis* distal scharf abgeschnitten, bei *melissa* distal leicht ausgewölbt erscheint. Die Valve ist gleichfalls nach aussen vertikal scharf abgesetzt und führt einen fingerförmigen Dorn mit stumpfer Spitze, der je nach der Lokalität in der Länge wechselt", and on page 204: „Die Valve (of *limniace*) ist sehr verschieden von jener der *melissa*-Formenreihe, joch- oder damensattelförmig, distal nicht spitz bedornt, sondern mit kräftigem Eckzacken bewehrt. Uncus robuster, manchmal nach aussen glatt abgeschnitten."



Explanation of the textfigures: *A.* Valva of *D. limniace* Cr.; Pr. v. = processus valvae. — *B.* Valva of *D. melissa* Cr. — *C.* Penis of *D. limniace*; Cu. = cuneus, which differs from that of *melissa*; p. sh. = penis-sheath; t. = spines. — *D.* Uncus with the anus; the uncus is very weak and is variable in shape. — The whole copulatory-apparatus differs also in size and shape.

It is not clear to me, what is the meaning of Mr. Fruhstorfer! Is the thorn of the valva of *limniace* not pointed, or has the valva not at all a thorn? All the species of the group Tirumala Moore bear a thorn on the valva, which thorn is very well visible even with the

naked eye. The differences, which I found in the copulatory-apparatus of these two species, which however are very related to one another, will be cleared up by the accompanying figures.

The two species are to be separated also by their pattern, but there are specimens in which this will be rather difficult.

How it is with *D. choaspes* Btlr. from Celebes and with *D. limniace* is still a question to me, because our material is as yet insufficient.

It is I suppose well known, that *D. limniace* Cr. has not yet been found in Sumatra and the islands West of it.

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